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torn in pieces, and driven to some distance. This resistance might also give such a direction to the fluid, as to break the skin; a thing not common even where strokes of lightning have been fatal. But whether the thoughts now suggested carry any evidence to prove that the electricity of the earth, in the case we have been considering, was positive, or not, I hope others who have given more attention to studies of this sort than I have been able to, will be led to make such communications as shall serve to illustrate this interesting branch of natural philosophy.

With great respect and esteem,

I am, Sir,

Your most obedient,

And humble servant,

JOHN LATHROP.

*Rev. Dr. Willard.*



*An account of the effects of Lightning on the house of JONATHAN MASON, Esq. in Boston. In a letter to the Rev. JOSEPH WILLARD, D.D. L.L.D. and vice president of the American Academy of Arts and Sciences. By Rev. JOHN LATHROP, D.D.*

SIR,

ABOUT 2 o'clock, P. M. on Wednesday the 23d of May, a cloud, which had been several hours collecting in the west and north, came up with a brisk wind and heavy claps  
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of thunder. Soon after the rain began to fall, the wind veered to the north, and brought over a very thick cloud, which had been collected in that quarter. The rain now came in torrents, mingled with hail and fire.

A few minutes after 2 o'clock, a discharge of lightning struck a ship at the Long Wharf, which shivered one of the masts to pieces. Another discharge struck the house of Jonathan Mason, Esq. in Marlborough street, and as the effects are somewhat curious, I beg leave to relate them. The house is of brick, three stories high, facing the street to the west, with a new end of wood at the north. It is furnished with a good conductor, fastened to a chimney, and passing down the north end by the brick wall. The whole charge of lightning passed down the conductor, without any injury, except loosening two or three of the iron staples, with which the conductor was fastened, until it came to about 10 feet from the ground. The charge then divided in the following manner: A part passed down the conductor, splitting upon the small trunk or box, which enclosed it, near the ground; but as the earth was not sufficiently wet to carry off the charge, there was an explosion, which burst through the cellar wall. The cellar door, which was shut, was very near the place where the lightning burst through the wall. The iron ring of this door attracted a part, or the whole of the lightning, which entered the cellar at this place, and by the nails sent it out again into the open air, ripping off the wood on the outside of the door, where the nails were clinched.

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We are now to follow a portion of the charge which flew off from the conductor, and entered the new part of the house, at about eighteen inches from the conductor, and about ten feet from the ground.

In the inside of the room, directly against the spot where the lightning tore off the clapboards and entered the house, three or four long and slender pieces of iron are driven far into the wood work, to which the machinery for the house bells is fixed. From this centre, the wires are carried into the different rooms. I will now relate the effects of the lightning, as they are to be seen in the different rooms. A part of the charge was received by the wire, which leads from the above-mentioned centre, directly to the kitchen. This portion of the fluid passed through three partitions of wood and plastering, without any damage, until it reached the kitchen. The house keeper, who was at the time near the kitchen door, says, the first she perceived was the ringing of all the bells, and at that instant, she saw a crinkling of fire about the last bell; as there are four in a line, and connected by the same wire; and in an instant the explosion from that bell, was such as deprived her of her strength, and had she not held by the door, she must have fallen. This discharge from the bell, as there was no good conductor near, struck a number of earthen dishes from the shelves, and passing through a small opening at the bottom of the dresser, burst into the cellar, tearing off the lath and plastering, which were carried to a considerable distance.

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Another portion of the fluid was received by the wire, which leads from the same centre, through the north front room, to the great entry. Upon entering the entry, the wire was melted, and falling on a dry mat on the floor, set it on fire. This portion of the charge losing its conductor, was attracted by the lower hinge of the front door, and conveyed out by the nails, as in the case of the cellar door abovementioned. Another part of the charge was carried from the same place of entering, by a wire, which passed through the north front room, across the great entry, and along the cornice of the south front room, then turning at a right angle, along the cornice on the south, to the crank and bell cord by the fire place.

The portion of fluid, which took this direction, melted the wire soon after it entered the south room. It then took the curtain rod of the window nearest the front entry, and as it had no good conductor from the curtain rod, there was probably an explosion, for the curtain was set on fire, with the cornice, and the wood work about the window. A large looking glass, which hung between the windows, was broken; part of the charge then took the remaining part of the broken wire, and followed it round to the fire place; but as the cord which hung down with the tassel, made a bad conductor, the charge flew off from the wire opposite to the corner of a large picture of president Washington, which hung over the breastwork, made a small opening from the back through to the gilding, ran down the side gilding to the bottom, leaving a dusky mark, and from the picture, passed down to the small opening  
between

between the breastwork and the marble mantle piece, entered the chimney and went off.

It may be a question, why the whole charge did not go down the conductor to the earth ?

I imagine the rod did not enter sufficiently deep into the ground. From its explosion through the cellar wall, it is evident the earth was not sufficiently wet to carry it easily off. Meeting with an obstruction in its direct course, it sought another ; and the irons for the bell machinery, above-mentioned, afforded the most ready conducting matter. The water also, which fell in a torrent, rendered the passage of the lightning easy, from the conductor to the part of the house where it entered.

With two observations I will finish this account, which I fear is too long.

The first is, that the part of the rod which enters the ground, should go deep enough to be always in moist earth, and that it should turn *from* the building. Had these things been attended to, it is probable there would have been no explosion into the cellar from the foot of the rod.

The other is, that great care should be taken not to have any good conducting matter *near* the rod. The iron machinery for house bells, being about eighteen inches from the conducting rod, no doubt, attracted that portion of the charge, which entered the house, and produced the effects which have  
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been related. Happily for the family, none of them were essentially injured. Mrs. Joy, who was in the chamber, over the place where the lightning entered, was pressed down, as with a heavy weight, and experienced a considerable degree of numbness till the next day.

With great affection and esteem,

I am, Sir,

Your most obedient humble servant,

JOHN LATHROP.

*Rev. President Willard.*



*Observations on Electricity, and an improved mode of constructing Lightning Rods. In a letter, from the Hon. LOAMMI BALDWIN, F.A.A. to the Rev. JOSEPH WILLARD, D.D. L.L.D. vice president of the American Academy of Arts and Sciences.*

*Woburn, Jan. 25, 1797.*

SIR,

THE partial effects of the electrical rods, which have been erected for the protection of buildings, &c. have led me to think, that they are not upon the best construction, especially those that terminate in one point

The philosophy of electricity seems to be enveloped in much obscurity. Electrics and non electrics exist in nature ;  
positive